

### **Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application.

### **Listing of Claims:**

1. (Currently amended) A piezoelectric biochip for the detection of the bovine spongiform encephalopathy (BSE) pathogen, which piezoelectric biochip comprises a piezoelectric chip (1), a common electrode (2) which is fixed on the lower side surface of the piezoelectric chip, and a microelectrode array (3) which is fixed on the upper side surface of the piezoelectric chip, ~~characterized in that~~ wherein the piezoelectric chip (1), a common electrode (2) and a microelectrode array (3) constitute a piezoelectric resonance array and a plurality of BSE prion protein (PrP) antibodies are immobilized on the electrodes of the microelectrode array ~~in a predetermined pattern~~, thereby forming a BSE PrP antibody array (4), the immobilized BSE PrP antibody array (4) forms detection sites for the BSE PrPs and the detection of the BSE pathogen is done by measuring the resonant frequency of the detection sites.

2. (Previously Presented) The piezoelectric biochip for the detection of the BSE pathogen according to claim 1, characterized in that in the BSE PrP antibody array (4), a 1-1000 nm thick layer of PrP antibodies is immobilized on each of the electrodes of the microelectrode array, and that the antibody array comprises antibodies against normal and abnormal PrPs with various N-terminal amino acid sequences.

3. (Previously Presented) The piezoelectric biochip for the detection of the BSE pathogen according to claim 2, characterized in that the BSE PrP antibody array consists of antibodies against normal and abnormal PrPs with N-terminal amino acid sequences

identified in I(SEQ ID NO:1) and II(SEQ ID NO:2) in Fig.3, respectively, and that the thickness of the layer of the PrP antibody is 100-150 nm.

4. (Previously Presented) A piezoelectric biochip for the detection of the BSE pathogen according to claim 2, characterized in that the BSE PrP antibody array consists of six antibodies against normal and abnormal PrPs with N-terminal amino acid sequences identified in I(SEQ ID NO:1), II(SEQ ID NO:2), and III(SEQ ID NO:3) in Fig.3, respectively, and that the thickness of the layer of the antibody is 100-150nm.

5. (Previously Presented) A piezoelectric biochip for the detection of the BSE pathogen according to claim 2, characterized in that the BSE PrP antibody array consists of eight antibodies against normal and abnormal PrPs with N-terminal amino acid sequences identified in I(SEQ ID NO:1), II(SEQ ID NO:2), III(SEQ ID NO:3), and IV(SEQ ID NO:4) in Fig.3, respectively, and that the thickness of the layer of the antibody is 100-500nm.

6. (Withdrawn) A method for manufacturing a piezoelectric biochip for the detection of the BSE pathogen, which method comprises:

- (1) manufacturing a microelectrode array; and
- (2) immobilizing PrP antibodies on the electrodes of the microelectrode array (3) by physical adsorbing, chemical bonding, cross-linking, embedding or self-assembly process, wherein the environmental temperature for antibody immobilization is greater than 0°C to 70°C inclusive, and the immobilization period of time is 0.1-24 hours, such that the configuration of the PrP antibodies remains unchanged before and after immobilization.

7. (Withdrawn) The method for manufacturing a piezoelectric biochip for the detection of the BSE pathogen according to claim 6, characterized in that the antibodies are

immobilized on the electrodes of the microelectrode array by a cross-linking process with a fixing agent consisting of 4% paraformaldehyde, 25% glutaraldehyde, 10% phosphate buffer solution at Ph 6-8, and a balance of water, wherein the immobilization temperature is 4°C and the immobilization period of time is 8 hours.

8. (Withdrawn) The method for manufacturing a piezoelectric biochip for the detection of the BSE pathogen according to claim 6, characterized in that the antibodies are immobilized on the electrodes of the microelectrode array by a cross-linking process with a fixing agent consisting of 2% ethyl-dimethylaminopropyl carboimide hydrochloride, 25% glutaraldehyde, 10% phosphate buffer solution at Ph 6-8, and a balance of water, wherein the immobilization temperature is 15°C and the immobilization period of time is 4 hours.

9. (Withdrawn) The method for manufacturing a piezoelectric biochip for the detection of the BSE pathogen according to claim 6, characterized in that the antibodies are immobilized on the electrodes of the microelectrode array by self-assembly of biotin and avidin, wherein the immobilization temperature is 25°C and the immobilization time is 8 hours.